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04445071 **Image available**

LIQUID CRYSTAL DISPLAY DEVICE AND ITS PRODUCTION

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JAPIO CLASS: 29.2 (PRECISION INSTRUMENTS -- Optical Equipment)

JAPIO KEYWORD:R011 (LIQUID CRYSTALS); R096 (ELECTRONIC MATERIALS --
Glass Conductors)

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ABSTRACT

PURPOSE: To form polysilicon TFTs in particular on a transparent substrate and to provide a technique for packaging this substrate around another picture element array as the technique for packaging the drivers for driving a flat panel display constituted by using TFTs.

CONSTITUTION: Picture element driving circuits 2, 3 formed of polysilicon on the transparent substrate are packaged by the bump technique around the substrate 1 of the picture element array formed of the amorphous silicon or polysilicon TFTs. Then, the transparent substrate is used for the driver chip and, therefore, the high-accuracy packaging of the drivers to the flat panel display is possible and since the common molding on the TFT substrate after packaging of the driver chips is possible, the high-fineness display is inexpensively produced with the good accuracy.

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Liq. crystal display device and its prodn. - comprising display panel on transparent substrate with terminlas and picture element driving circuit

Patent Assignee: HITACHI LTD (HITA)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
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Priority Applications (No Type Date): JP 92239259 A 19920908

Patent Details:

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JP 6088971	A		6				

Abstract (Basic): JP 6088971 A

The liq. crystal display device includes; (a) liq. crystal display panel provided on a first transparent substrate and having terminals for supplying voltage pulses to a signal line for composing a picture element; and (b) a picture element driving circuit for driving the picture element, provided on a second transparent substrate.

The picture element driving circuit is formed of a polysilicon TFT. The second transparent substrate is mounted on the first transparent substrate.

Prodn. of the liq. crystal display device comprises; (a) providing a positioning mark on the first transparent substrate simultaneously with providing the terminal section on the first transparent substrate; (b) providing a positioning mark on the second transparent substrate simultaneously with providing the terminal section on the second transparent substrate.

USE/ADVANTAGE - The method produces a liq. crystal display devoce. The driver formed on the transparent substrate is mounted on the flat panel display with high accuracy, reducing mounting to 5%. The mounting section has improved reliability. No moulding is required for mounting chips, reducing cost.

Dwg.0/7

Title Terms: LIQUID; CRYSTAL; DISPLAY; DEVICE; PRODUCE; COMPRISE;

DISPLAY; PANEL; TRANSPARENT; SUBSTRATE; PICTURE; ELEMENT; DRIVE;
CIRCUIT

Derwent Class: L03; P81; U14

International Patent Class (Main): G02F-001/136

International Patent Class (Additional): G02F-001/1345

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